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| 10/004,289      | 10/25/2001  | Steven I. Ross       | 1280.2003-000       | 8162             |

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EXAMINER

RIVERO, MINERVA

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2655

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                             |  |
|------------------------------|-------------------------------|-----------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/004,289 | Applicant(s)<br>ROSS ET AL. |  |
|                              | Examiner<br>Minerva Rivero    | Art Unit<br>2655            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 9/7/05.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

1. In the Remarks filed 9/7/05, Applicant amended claims 1, 8, 15, 22 and 23, and submitted arguments for allowability of pending claims.

### ***Response to Arguments***

2. Applicant's arguments filed 9/7/05 have been fully considered but they are not persuasive.

Regarding amended claims 1, 8, 15, 22 and 23, Applicant argues that Loatman *et al.*'s parsing of a sentence is performed according to the Augmented Transition Network (ATN) and asserts it does not incorporate domain information. The examiner cannot concur with the Applicant. The Natural Language Understanding (NLU) system disclosed by Loatman *et al.* disclose integrating explicit and implied meaning of the text through a case frame applier and a discourse analysis segment in order to produce conceptual structures (see Abstract; Col. 3, Lines 35-40; Fig. 1, element 130). The examiner notes Applicant's separation of foundation (basic grammar) and application models (semantic insight) (Page 3, Lines 3-11), which comprise the application domain model in the same manner the case frame applier and discourse analysis elements partially compose Loatman *et al.*'s NLU system. Therefore claims 1, 8, 15 and 22-23, and their dependent claims, 2-7, 9-14, and 16-21, respectively, stay rejected.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 23 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 23 is drawn to a "signal encoded with a "computer program" " *per se* as recited in the preamble and as such as non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed.

Art Unit: 2655

Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Further, a signal, i.e., a form of energy, does not fall within one of the four statutory classes of §101.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, 7-12, 14-19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Loatman *et al.* (US Patent 4,914,950).

7. Regarding claims 1, 8, 15 and 22-23, Loatman *et al.* disclose a method, system and computer-readable medium for analyzing spoken utterances comprising common language words in a speech-enabled environment comprising the steps of and elements for:

defining a grammatic specification suitable for processing spoken utterances based on a domain model for a speech-enabled application (*speech recognition device*,

Art Unit: 2655

Col. 6, Lines 16-18; *deriving an ATN grammar specification and submitting the resultant 'case frames' to discourse analysis to derive domain-specific knowledge*, Col. 2, Line 65 – Col. 3, Line 3, see Fig. 1, elements 80, 90, 110, 120, 130 and 135);

processing a recognition message, based on one of the spoken utterances recognized by a speech engine, to produce an initial semantic representation of the recognized spoken utterance based on the grammatic specification and the domain model (*converting the syntactic structure to 'case frames' which are semantic structures*, Col. 2, Line 65-Col. 3, Line 3) and

providing a set of propositions that represent the recognized spoken utterance, the set of propositions based on the initial semantic representation and the domain model (*passing the conceptual structures to a knowledge system*, Col. 6, Lines 44-69, see Fig. 1, elements 140, 160 and 165).

8. Regarding claims 2, 4, 9, 11, 16 and 18, Loatman *et al.* further disclose the step of defining a grammatic specification comprises the steps of:

receiving an ontological description of the domain model based on entities, classes, and attributes (*discourse analysis component for generating patterns based on the specific domain*, Col. 3, Lines 35-43; *Role Specification*, Section 5.1; *entities that may fill the case roles*, Col. 1, Lines 45-50; *Person or Agent class*, and *attributes or properties*, Col. 16, Lines 30-51; *case frames represent a proposition about the world* (thus ontological description), Col. 3, Lines 12-24);

receiving syntax templates for the domain model specifying legal word sequences based on the ontological description (*syntactic parsing and applying domain-specific templates*, Col. 6, Lines 52-62) and

combining the ontological description, a lexicon, and the syntax templates to generate the grammatic specification (*deriving a conceptual structure from lexical, syntactic, semantic and domain-specific information*, Col. 2, Line 61 - Col. 3, Line 3, Col. 3, Lines 12-24 and 35-43).

9. Regarding claims 3, 10 and 17, Loatman *et al.* disclose the domain model comprises a lexicon of words associated with the speech-enabled application, said lexicon providing synonyms and parts of speech information for elements of the ontological description, and wherein the grammatic specification is based on said lexicon (*separating lexical categories*, Col. 40, Lines 17-21 and *synonyms*, Col. 47, Lines 45-55 (see *Lexicon*, Section 4)); *concept association and case frame template specifications*, Col. 58, Lines 24-32; *examining a series of words in reference to a lexicon as part of the conceptual structure generation process*, Col. 2, Lines 61-64; *application-specific vocabulary*, Col. 2, Lines 18-21).

10. Regarding claims 5, 12 and 19, Loatman *et al.* disclose the domain model comprises a syntax specification and the grammatic specification is based on the syntax specification (*grammar specification based syntactic parsing results in case frames*, Col.

Art Unit: 2655

2, Lines 65; *pattern matching based on domain-specific knowledge*, Col. 3, Lines 35-43).

11. Regarding claims 7, 14 and 21, Loatman *et al.* further disclose the initial semantic representation is based on a frame structure representing the recognized spoken utterance (*stream of text produced by a speech recognition device and semantic structures known as 'case frames'*, Col. 6, Lines 14-18 and 41-43;).

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 6, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loatman *et al.* (US Patent 4,914,590) in view of Phillips *et al.* (US Patent 6,519,562).

Regarding claims 6, 13 and 20, Loatman *et al.* do not disclose but Phillips *et al.* do disclose the grammatic specification is a Backus Naur Form grammar (Col. 6, Lines 22-32).



Art Unit: 2655


Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to modify the teachings of Loatman *et al.* by having the grammatic specification be a Backus Naur Form grammar, as taught by Phillips *et al.*, since it's an effective method of analyzing and describing the linguistic properties of a word string.

### **Conclusion**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



W. R. YOUNG  
PRIMARY EXAMINER

11/03/05